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     (FILE 'HOME' ENTERED AT 06:42:10 ON 08 SEP 2005)
     FILE 'CA' ENTERED AT 06:42:17 ON 08 SEP 2005
L1   94354 S PRESCREEN? OR PRETEST? OR(PRE OR PRELIMINARY OR FIRST OR INITIAL
           OR BEGINNING OR STARTING OR INTRODUCTORY OR PREPARATORY)(2W)
           (SCREEN? OR TEST? OR EXAMIN? OR ASSESS? OR SENSOR OR IDENTIF? OR
           DETECT? OR DETERMIN? OR MEASUR? OR INVESTIGAT? OR CHARACTERIZ? OR
           ANALY? OR ESTIMAT?)
L2  132199 S (CATALYST OR CATALYTIC OR MATERIAL)(4A)(PICK? OR SELECT? OR
           SELECTION OR SELECTING OR SELECTED OR DISCOVER? OR CHOICE OR CHOOS?
           OR CHOSEN OR FIND? OR IDENTIF? OR DEVELOP?)
L3     813 S L1 AND L2
L4   46054 S (CATALYST OR CATALYTIC OR MATERIAL)(4A)(ELIMINAT? OR REJECT? OR
           REMOVE OR REMOVAL)
L5     143 S L1 AND L4
L6     265 S L3 AND(REACTOR OR REACTION)
L7     176 S L6 NOT(NUCLEAR OR RADIO? OR NEUTRON OR ENZYM? OR DNA OR CDNA OR
           RNA OR MRNA OR ANTIBODY)
L8     160 S L7 NOT(WATER PURIF? OR LEUKOCYTE OR WELDED OR PCR OR GENE OR
           DISPOSAL OR WASTEWATER OR SOLDER OR TOKAMAK)
L9      46 S L5 AND(REACTOR OR REACTION)
L10     38 S L9 NOT(NUCLEAR OR RADIO? OR NEUTRON OR ENZYM? OR DNA OR CDNA OR
           RNA OR MRNA OR TOKAMAK)
L11    548 S L3 NOT L6
L12     44 S L11 AND CATALYST
L13     12 S L5 NOT L9 AND CATALYST
L14    242 S L8,L10,L12-13
L15    161 S L14 NOT PY>2000
L16     11 S L14 NOT L15 AND PATENT/DT
L17      7 S L16 AND PY<2003
L18    168 S L15,L17
L19    165 S L18 NOT(ANTIBODY OR ENZYM? OR FIRE OR NIGER)

=> d bib,ab l19 1-165

L19  ANSWER 26 OF 165  CA  COPYRIGHT 2005 ACS on STN
AN   131:259628  CA
TI   Catalyst evaluation for atmospheric residue cracking, the effect of
     catalyst deactivation on selectivity
AU   Gilbert, W. R.
CS   Process Division, PETROBRAS R and D Center, Rio de Janeiro, 21949-900,
     Brazil
SO   Preprints - American Chemical Society, Division of Petroleum Chemistry
     (1999), 44(4), 534-536
AB   Five catalysts were chosen for comparison after preliminary MAT
     screening. The fresh catalysts were loaded with 6000 ppm Ni and 5000
     ppm V (40% of the expected Ecat level) using the Mitchell method, and a
     sixth catalyst loaded with 2500/2100 ppm Ni/V (simulating higher makeup
     rate) was used as base case. The six catalysts were then submitted to
     cyclic propylene steaming. Gasoline and coke yield, atm. residue
     conversion, catalyst surface area and catalyst deactivation were
     discussed.
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L19 ANSWER 42 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 129:46606 CA
TI A rapid half-cell technique for the **pre-screening** of polymer fuel cell catalysts
AU TamizhMani, G.; Dodelet, J. P.; Guay, D.; Dignard-Bailey, L.
CS Natural Resources Canada, CANMET-Energy Diversification Research Laboratory, Varennes, QC, J3X 1S6, Can.
SO Journal of Electroanalytical Chemistry (1998), 444(1), 121-125
AB Four platinum-based catalysts with different catalytic activity for the oxygen redn. **reaction** were prepd. and tested in polymer fuel cells (PFCs) and in half-cells with H2SO4 and HF electrolytes. The activity results of PFCs at 0.9 V vs. RHE (reversible hydrogen electrode) can be mimicked in parallel by the results obtained in HF electrolyte but not by the results obtained in H2SO4 electrolyte. This paper concludes that the **pre-screening** of a huge no. of Pt-based **catalysts** for the **selection** of potential **catalysts** for the PFCs can be carried out by a rapid half-cell technique with a nonadsorbing electrolyte such as HF.

L19 ANSWER 46 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 128:142832 CA
TI Progress on the European gas turbine program "AGATA"
AU Gabrielsson, R.; Holmqvist, G.
CS Volvo Aero Corporation, Trolihattan, Swed.
SO Journal of Engineering for Gas Turbines and Power (1998), 120(1), 179-185
AB A review with 5 refs. The four-year European Gas Turbine Program "AGATA" was started in Jan. 1993 with the objective of developing three crit. components aimed at a 60 kW turbogenerator in an hybrid elec. vehicle: a catalytic combustor, a radial turbine wheel and a static heat exchanger. The AGATA partners represent car manufacturers as well as companies and research institutes in the turbine, **catalyst**, and ceramic material fields in both France and Sweden. This paper outlines the main results of the AGATA project for the first three-year period. Exptl. verification of the components started during the third year of the program. A high-pressure/temp. test rig for the combustor and the heat exchanger tests has been built and is now being commissioned. A high-temp. turbine spin rig will be ready late 1995. The turbine wheel design is completed and ceramic Si3N4 spin disks have been manufd. by injection molding and Hot Isostatic Pressing (HIP). A straight blade design has been selected and FEM calcns. have indicated that stress levels that occur during a cold start are below 300 MPa. The catalytic combustor final design for full-scale testing has been defined. Due to the high operating temp., 1350°C, **catalyst** pilot tests have included aging, activity, and strength tests. Based on these tests, substrate and active **materials** have been **selected**. **Initial** full-scale **tests** including LDV measurements in the premix duct will start late 1995. The heat exchanger design has also been defined. This is based on a high-efficiency plate recuperator design. One crit. item is the ceramic thermoplastic extrusion manufg. method for the extremely thin exchanger plates another is the bonding technique: ceramic to ceramic and ceramic to metal. Significant progress on these

L19 ANSWER 86 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 118:126912 CA
TI **Reactor** materials for use with the lithium/magnesia methane coupling catalyst
AU Slagtern, Aase; Dahl, Ivar M.; Jens, Klaus J.; Hansen, Eddy; Seiersten, Marion
CS Cent. Ind. Res., Oslo, 0314, Norway
SO Applied Catalysis, A: General (1992), 91(1), 13-25
AB **Selected materials** were tested for use as **reactor** materials with the Li/MgO catalyst at 700°. The materials were tested in powd. form mixed with the catalyst. Corrosion and catalytic activity were obsd. **Reactor** tubes were made of Al2O3, Al2SiO5 and ZrO2 stabilized with CaO [ZrO2 (Ca)], since these materials seemed promising in the **initial testings**. The ZrO2(Ca) tube showed initial cracks after catalytic testing. A thin smooth corrosion layer was obsd. on the Al2O3 tube. A thicker corrosion layer was obsd. on the Al2SiO5 tube. As a potential industrial **reactor** tube, an alonized steel **reactor** was tested. The catalytic activity at 750° decreased in the latter **reactor** with a corresponding increase in CO2 selectivity. Corrosion products also were formed inside the **reactor** tube.

L19 ANSWER 87 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 118:83223 CA
TI The partial oxidation of ethanol by heterogeneous catalytic systems derived by molybdenum oxide vapor synthesis
AU Alyea, E. C.; Brown, K. F.; Durham, L.; Svazic, I.
CS Guelph-Waterloo Cent. Grad. Work Chem., Univ. Guelph, Guelph, ON, N1G 2W1, Can.
SO Studies in Surface Science and Catalysis (1992), 73(Prog. Catal.), 309-14
AB Some heterogeneous Mo oxide catalytic systems derived by the metal oxide vapor synthesis (MOVS) methodol. have excellent low temp. activity for the partial oxidn. of EtOH to MeCHO. The results of **preliminary** micro-**reactor testing** are presented for Mo oxide catalysts supported on SnO2, anatase, and γ-alumina and compared to the unsupported MOVS-derived Mo oxide catalyst and Fe2(MoO4)3/MoO3 catalyst. The new supported catalysts all reach 100% conversion at <250° and also attain 100% selectivity for MeCHO.

L19 ANSWER 118 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 104:57982 CA
TI Studies on palladium/charcoal catalysts for isotopic exchange **reaction** in hydrogen/water medium
AU Jain, Savita; Samanta, S. K.; Raj, S. S.; Ramaswamy, M.; Rastogi, R. C.
CS Waste Manage. Div., Bhabha At. Res. Cent., Bombay, 400 085, India
SO Adv. Catal., [Proc. - Natl. Symp. Catal.], 7th (1985), 383-7. Editor (s): Prasada Rao, T. S. R. Publisher: Wiley, New York.
AB Catalysts with Pd loaded on activated charcoal supports were prepd. and **preliminary screening** of the catalysts was done on the basis of copper (II) formate decompn. **reaction**. The **selected catalysts** were converted into hydrophobic pellets after blending with Teflon and tested in a static **reactor** for H-D exchange **reaction** between hydrogen gas and liq. water. Results indicated depletion of the D content of initially

enriched hydrogen gas. The half **reaction** times were used t

L19 ANSWER 120 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 103:92268 CA
TI High temperature catalytically assisted combustion
AU Bracco, F. V.; Royce, B. S. H.; Santavicca, D. A.; Stein, Y.
CS Dep. Mech. Aerosp. Eng., Princeton Univ., Princeton, NJ, USA
SO Report (1983), AFOSR-TR-85-0259; Order No. AD-A151912/3/GAR, 69 pp. Avail.: NTIS
From: Gov. Rep. Announce. Index (U. S.) 1985, 85(13), 232
AB A recently **developed** 2-dimensional, transient **catalytic** combustion model was used to study the ignition of CO-air mixts. in a Pt-coated perovskite catalytic honeycomb. Comparisons between calcd. and measured steady state substrate temp. profiles and exhaust gas compns. show good agreement. A Pt-doped perovskite catalyst has been proposed which will exhibit low temp. light off and high temp. stability. **Preliminary tests** using a perovskite powder with Pt 1 wt.% are encouraging, showing very little change in surface activity when used with C3H8 fuel. Variations in catalytic activity from sample to sample were also found and after extensive testing the cause of these variations were not identified. However, **preliminary tests** using Fourier transform IR photoacoustic spectroscopy do indicate differences in the various catalyst samples that may be related to the difference in catalytic activity. The use of bench top oven and differential scanning calorimetry techniques for screening catalysts in terms of relative activity and aging characteristics has also been demonstrated.

L19 ANSWER 130 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 93:172471 CA
TI **Materials development** and evaluation for the ceramic helical expander
AU Landingham, R. L.; Taylor, R. W.
CS Lawrence Livermore Lab., Univ. California, Livermore, CA, 94550, USA
SO Materials Science Monographs (1980), 6(Energy Ceram.), 494-512
AB The supporting role of the materials program for the ceramic helical expander program for coal-fired power plants was described. The materials problems for this rotary expander in an extremely severe environment, a direct coal-fired Brayton topping cycle, were defined. Readily available materials and methods for possible soln. to these material problems as well as initiating some longer-range studies to improve reliability were evaluated. A **preliminary screening** of materials in hot coal-fired environments was performed to **select** candidate **materials** and coatings. But more detailed evaluations are required of the candidate materials, **reaction**-bonded Si3N4 and Si-Al-O-N (Sialon) system and the coating, chem. vapor-deposited Si3N4 and Sialon. Termination of the helical expander program abruptly stopped the materials program during this evaluation.

L19 ANSWER 137 OF 165 CA COPYRIGHT 2005 ACS on STN
AN 85:131162 CA
TI **Preliminary** results from **screening** tests of commercial catalysts with potential use in gas turbine combustors. Part 1: Furnace studies of catalyst activity
AU Anderson, David N.

CS Lewis Res. Cent., NASA, Cleveland, OH, USA
SO NASA Tech. Memo. (1976), NASA-TM-X-73410, 21 pp. Avail.: NTIS From: Sci. Tech. Aerosp. Rep. 1976, 14(14), Abstr. No. N76-23266
AB Thirty com. produced monolith and pellet catalysts were tested as part of a screening process to **select catalysts** suitable for use in a gas turbine combustor. The catalysts were contained in a 1.8 centimeter diam. quartz tube and heated to temps. varying between 300 and 1,200°K while a mixt. of propane and air passed through the bed at space velocities of 44,000-70,000/hour. The amt. of propane oxidized was measured as a function of catalyst temp. Of the samples tested, the most effective catalysts proved to be noble metal catalysts on monolith substrates.

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